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ABSTRACT

A study examined developmental trends in the quality and outcomes of disagreements occurring in the conversation of small groups of acquainted peers. Specifically, the study focused on the relationship of disagreeing and arguing sequences to the general level of topical coherence achieved in the conversation as a whole. Five discussion groups, each composed of three females and three males, were formed at each of five grade levels--second, fifth, ninth, twelfth, and college. The eighth meeting of each group was transcribed and turns of talk were coded for topical coherence and argumentation. The results suggested that the development of argumentation is closely related to the development of norms pertaining to topic. Developmental trends in the quality of disagreeing and arguing closely paralleled trends in the topical coherence achieved by a group as a whole. In addition, where norms pertaining to topic were weak, argument was less well-modulated, and where the norms pertaining to topic were stronger, argument conformed to the norms. Adolescents' and adults' conversations contained a lower proportion of disagreements, briefer sequences of disagreements, and fewer insults than did those of young children. (Samples of topical coherence categories and extensive tables of data are appended.) (FL)

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Topical context is an important determinant
of developmental trends in argumentation

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Abstract

Though increased interest is evident, we still know little about the broad span development of social processes such as argumentation. The purpose of the present study is to examine developmental trends in arguments from middle childhood to early adulthood and to test the hypothesis that norms pertaining to topical coherence also govern the quality and outcomes of arguments.

Five discussion groups (3 females and 3 males) were formed groups at each of the following grades (2nd, 5th, 9th, 12th, adult). The 8th meeting of each group was transcribed and turns of talk coded for topical coherence and disagreement.

The results suggest that the development of argumentation is closely related to the development of norms pertaining to topic. Developmental trends in the quality of disagreeing and arguing closely parallel trends in the topical coherence achieved in talk as a whole. Also, where the norms pertaining to topic are weak, argument is less well modulated. Where the norms pertaining to topic are stronger, argument conforms to the norms. Children's conversation contained a higher proportion of disagreements and longer sequences of disagreements. Only the youngest individuals' conversation contained a noticeable proportion of insults, which

disrupted topical coherence wherever they occurred. Adolescents' and adults' conversation contained a lower proportion of disagreements, briefer sequences of disagreements, and few insults.

The only finding at variance with this view is that a higher proportion of reasons were offered when making a factual disagreement than in conversation as a whole. Nevertheless, arguments are brief and typically ended without explicit resolution. In addition the proportion of factual reasons offered in disagreeing parallels developmental trends in the overall proportion of factual reasons offered in conversation. These additional findings suggest that, while disagreement may stimulate the expression of conversationalists' viewpoints, disagreeing and arguing are embedded in the pursuit of topics and not events that are bracketed off from the flow of talk.

Topical context is an important determinant
of developmental trends in argumentation

Introduction

The problem

The present study is an examination of developmental trends in the quality and outcomes of disagreements occurring in the conversation of small groups of acquainted peers across a broad age range. The focus of the study is the relationship of disagreeing and arguing sequences to the general level of topical coherence achieved in conversation as a whole.

It is hypothesized that disagreeing and arguing conform to prevailing norms of topical coherence. Disagreeing and arguing appear to be structured partly by the manner in which the topic under discussion is pursued. If true, such a finding would contribute to discourse analysis by focusing attention on the conversational context in which focused interaction such as arguing, requests and responses, and directives occur.

Most research on discourse has consisted of careful analyses of the sequencing of turns in focused interaction (e.g. Ervin-Tripp & Mitchell-Kernan, 1977; Schenkein, 1978; Sudnow, 1972), and the richness of the resulting descriptions has been encouraging. The success of these efforts and the tendency to view conversation in terms of the needs and intentions of the

individuals participating (e.g. Goffman, 1967, 1974, 1981) have led some researchers to posit that all conversation is focused interaction (e.g. Bach & Harnish, 1979) or, at the least, that sequences of focused interaction provide the basis for a general analysis of discourse. My work on the development of conversation during childhood and adolescence (reference to author's work) has led me to believe that something closer to the opposite may be true; general norms of topical coherence appear to exert a strong influence on the accomplishment of focused interaction sequences while such sequences appear to exert little influence on norms of topical coherence.

A definition of topical coherence

Though we all have implicit notions of topic, operationalizing them has proved to be a difficult task (Hobbs, 1979; Reichman, 1978; Shank, 1977). The method employed in the present study is a refinement of the ideas pertaining to the development of conversational quality that Piaget presented in his early work, a method similar at the operational level to Shank's approach to the definition of topic.

In a little referenced study in The language and thought of the child, Piaget proposed developmental sequences pertaining to argumentative conversation and to nonargumentative conversation. The sequence for argumentative talk: (1) quarrels which may include insults (e.g. "Give it. (takes toy)" "Mine!" "Poopy pants!"), (2) arguments without elaboration (e.g. "It's mine." "Is

not!" "Is so!"), (3) arguments including justification for the positions held (e.g. "It's my turn." "You had one; I just got it."). The sequence for nonargumentative talk: (1) collective monologue and imitative sequences (e.g. "Look, a sun." "Sun! Sun!" "Sun-n-n!"), (2) retelling stories and activity-based talk (e.g. "I went to Grandma's." "I went swimming--all day long." "I--um--"), (3) dialogues including the explanation of topic related events or motives (e.g. "You takin' Trig ?" "Nah. Hate math." "Well--you--you don' give it a chance."). Thus, Piaget emphasized the topical coherence achieved between contiguous turns of talk in his sketch of the development of conversation. The degree of semantic continuity and elaboration are the basis for his judgements of conversational quality.

The present study also employed a turn-level analysis of topical coherence and semantic criteria for degree of coherence. Like Shank, the present effort revolved around an explicit definition of topic, a problem sidestepped by Piaget but crucial since judgements of degree of topical coherence are based on inferences pertaining to current topic. The solution arrived at is to define topic as the relation in subject matter among 3 consecutive and related turns of talk; thus, topic is treated as an emergent, fluctuating property of conversation. The degrees of topical coherence distinguished once topic is inferred are described in the Method (See also author's coding scheme.).

Theoretical background of the study: The relationship of focused interaction to the general cohesiveness of conversation

Piaget believed that topical coherence as a organizing feature of talk emerges as a generalization of the norms pertaining to focused interaction, especially those associated with arguing. Such a possibility was also mentioned by Brown (1979) in the context of a recent discussion of the development of early pragmatic abilities. The current emphasis on the study of focused interaction gives the impression that all of conversation is potentially analysable in terms of the participants expressed needs (e.g. Ervin-Tripp & Mitchell-Kernan's comments on the state of research on child discourse). In fact, Goffman (1981) has proposed such an analysis of discourse as have others who are interested in turns of talk as "speech acts" (Austin, 1962) by which speakers express their needs and desires (e.g. Bach & Harnish, 1979; Searle, 1969, 1975).

While such research has contributed greatly to our understanding of conversational processes, it suggests an extremely intentional view of conversation. It also suggests that the structure of conversation is like that of focused interactions and that focused interactions exert a great influence on the flow of talk. An extensive study of the data employed in the present study suggests that there are definite limitations to the utility of this perspective for creating a general description of conversational coherency. A large proportion of the talk of individuals across of broad age range does not appear to be purposive in the sense those

above have implied; it appears to be loosely participatory and guided by norms governing topic. Though these norms appear to be diffuse in comparison to the sequencing rules operative in focused interaction, they appear to exert a pervasive influence on the progress of conversation and to supercede norms pertaining to focused interaction when the two collide. It is the purpose of the present study to demonstrate the influence of norms pertaining to topic on a frequently studied kind of focused interaction as a means of drawing attention to this line of reasoning.

The selection of arguments as an example of focused interaction

Arguments were chosen for detailed study. They are a prime candidate for a developmental study of the relationship of focused interaction to the general level of topical coherence achieved in conversation for the following reasons:

1. Research has demonstrated that some argument sequences are of considerable complexity.
2. Arguments are generally believed to be needful and purposive undertakings.
3. The arguments of children, adolescents, and adults have been examined and hypotheses pertaining to age differences in argument put forward.

Each point is taken up in turn.

The complexity of arguments. Arguing has been examined by child psycholinguists (e.g. Eisenberg & Garvey, 1981), anthropologists (e.g. Boggs, 1978; Brenneis & Lein, 1977; Lein & Brenneis, 1978), sociolinguists (e.g. Labov, 1972), and students of social relations (e.g. Bales, 1950; Danziger, 1976).

Arguments of considerable complexity have been revealed wherever experimenters looked. For example, the following is an adversative episode between two preschoolers reported by Eisenberg and Garvey:

- 1: Pretend this was my car.
- 2: (having just gotten off the car) No!
- 3: Pretend this was our car.
- 4: (reluctantly) All right.
- 5: Can I drive your car?
- 6: Yes, okay. (smiles and moves away)

The impression conveyed by this and other examples is that arguments call forth formidable social interaction skills, even at a young age.

Arguments as needful and purposive. Psychologists like Eisenberg and Garvey have emphasized the social skills displayed during arguments, anthropologists and sociolinguists have been more interested in the ritualistic aspects of arguments, seeing in the rituals the mechanisms by which social order is maintained. For example, Labov (1972) examined arguments among black, city-dwelling adolescents. He described arguments consisting of reciprocal insults of which the following is an example:

- 1: Eat shit.
- 2: What should I do with the bones?
- 3: Build a cage for your mother.
- 4: At least I got one.
- 5: She is the least.

Labov felt that an important purpose of the ritual quality of this kind of arguing is the maintenance of social distance. That is, the ritualized manner of arguing is seen to preserve social equilibrium by preventing injury to the individuals arguing.

The role of arguments in conversation. Researchers in the fields of social relations and psychotherapeutic processes generally view excessive arguing as an impediment to communication (e.g. Bales, 1950; Gottman, 1979). Poorly controlled arguments may lead to the deterioration of social order. Yet, a certain amount of argument may assist communication processes. Such possibilities focus interest on group differences in the frequency of arguments and their effects on the general quality of conversation achieved.

This interest in the frequency of arguments has been placed in a developmental context by Labov (1972) who raised the possibility that the arguments of children might be more frequent and lengthy than those of adolescents or adults. This hypothesis is based on the assumption that social norms present in children's conversation--such as politeness and staying with the topic--are more fragile and, thus, more vulnerable to collapse during arguments than those operative in the conversation of older individuals. If so, arguments would get out-of-hand more frequently with a corresponding detrimental effect on the general conversation.

Piaget (1926/1955, 1932/1965) had a more optimistic view of the role of arguments in social and cognitive development. He felt that arguments contribute to the development of both kinds of abilities by providing a forum for the exchange of information and opinion. Eisenberg and Garvey found their results on the arguments of preschool children to be consistent with such an hypothesis. Of

particular interest for the present study, Piaget felt that the quality of arguments develops in advance of the quality of conversation in general, because arguments elicit the explanations of the participants' perspectives.

The hypothesis that arguments conform to norms pertaining to topic

An outline of developmental trends in topical coherence. The quality of conversation achieved by small groups of acquainted peers changes markedly with age (reference to author's work).

Those changes may be outlined as follows:

A. The conversation of younger children does not contain good topical organization. Discussion of a topic is typically brief and abruptly ended.

B. The conversation of older children is topically well organized but superficial. Discussion of a topic may be quite extended but typically consists of a sequence of stories.

C. The conversation of middle adolescents contains a substantial proportion of topic related judgements, which gives their conversation more depth than that of younger individuals.

D. The conversation of late adolescents contains a higher proportion of topic related expansions relative to judgements than the conversation of younger adolescents. Their conversation also contains dialogues where the topic of discussion is another person's motives or feelings. Both improvements give the conversation of late adolescents a more personal quality than that of younger individuals.

E. The conversation of young adults contains an even higher proportion of expansions in comparison to judgements than the conversation of late adolescents, and talk about persons' motives and feelings is less judgemental. Young adults' conversation contains freer expression and more thorough discussion of both factual and personal topics than the conversation of younger individuals.

An hypothesized parallelism between the development of topical coherency and of the quality of arguments. Thus, conversation appears to have a protracted developmental course; and, if norms pertaining to topic also govern disagreeing and arguing, these will display a similarly protracted course of development. If so, the developmental sequence in the quality of arguments would be similar to the one that Piaget outlined but considerably delayed in terms of its timing during development and parallel to the development of topical coherency rather than in advance of it.

Consequences for a view of argumentation. Viewing arguments in the context of the topical coherence achieved in conversation suggests different postulates for understanding the social regulation of disagreeing and arguing than those suggested from a more logical and/or linguistic perspective (e.g. Goffman, 1981; Grice, 1975). A basic fact of conversation is its "forward motion". Disagreeing and arguing occurring in the stream of talk might often be brief and ended abruptly by the participants simply going on with discussion of the topic at hand. As well, disagreements might often not receive a rejoinder, because next speaker has the option of picking up on various aspects of the current topic. Such a state of affairs might be dissatisfying from a logical standpoint and viewing argument sequences as complete in themselves, but such results would draw attention to the need to view arguments in their conversational context to obtain an understanding of their structure and outcomes.

Consequences for a view of conversation. It is hypothesized that a basic principle of conversation is its "forward motion". Topics undergo continual evolution. Participants feel constrained to "keep things moving" more than to arrive at a logically adequate conclusion of particular issues arising during talk. More crucial appears to be a maintenance of the participatory frame of talk, to keep the topic "open" to a variety of inputs and the tone of talk sufficiently friendly. From this perspective arguments should be brief and closely tied to the general quality of talk.

Method

Setting for conversation.

The conversation of small groups of peers occurring in the presence of a nondirective adult was selected for study. Each group contained 3 females and 3 males and met for 12 sessions.

Subjects.

Five groups at each of 5 grades were conducted (2nd, 5th, 9th, 12th, young adult) , a total of 25 groups. Participants were selected randomly from nontracked classes of the Durham County Public Schools (N. C.) and Durham Technical Institute.

Data collection.

Each meeting of each group was taperecorded. The 8th meeting was transcribed by speaking turn to provide a sample of conversation where individuals were familiar with one another but before concerns about the end of the experience were expressed. A total of 14,951 turns of peer interaction were examined, 988 disagreements.

Coding scheme.

Topical coherence was assessed by examining the manner in which each turn was related to the directly preceeding turns in subject matter. It was necessary to use atleast the preceeding two turns to infer the topic, and each turn was coded with respect to the manner in which it followed on the topic related aspects of the directly preceeding turn(s). Five categories of topical coherence were distinguished: Unrelated Turns, Tangential Turns, Minimally Related Turns, Factually Related Turns, and Perspective Related Turns. Each of these categories was composed of different kinds of turns, including Disagreements (Table 1). Insults, Simple Disagreements, Factually Related disagreements, and Perspective Related Disagreements were distinguished. All Factually Related and Perspective Related Turns were also classified as an Evaluation (e.g. turns 2 and 3 in the sample of Factually related turns), Elaboration (e.g. turns 2 and 3 in the sample of Factually related disagreements), or Question (e.g. turn 3 in the sample of Perspective related turns). A different kind of Disagreement was

associated with each of these kinds of Factually related and Perspective related turns.

Insert Table 1 here.

Each turn was coded independently by two coders. Coder agreement was uniformly high for categories of topical coherence (87% or greater) and within acceptable limits for those categories plus selected kinds of turns such as Disagreement (82% or higher).

Results

Developmental trends in the frequency of Disagreement.

The proportion of Disagreements in conversation varied widely from group to group. The variance seemed especially great in the conversation of second and fifth graders. This suspicion was confirmed by a test of homogeneity of variance comparing the variance in the proportion of Disagreements in children's conversation to the variance in the proportion of Disagreements in older individuals' conversation, $F(9,14)=7.4, p<.01$. The relative magnitude of the variances is given by the F score. Thus, the variance in the proportion of Disagreements in the conversation of second and fifth graders was several times greater than that in the conversation of older individuals.

The conversation of children seemed also to contain a greater proportion of Disagreements than the conversation of adolescents and adults. On the average, the conversation of children contained 10.8% Disagreements (range:0-30.1%) in comparison to 5% Disagreements in the conversation of adolescents and adults (range:1.3-12.5%). A t test for independent samples interpreted using reduced degrees of freedom to account for nonequal variances (Winer, 1971) revealed this to be a significant difference, $t=2.2, df=8, p<.05$. Thus, the conversation of children contained a higher proportion of Disagreements than the conversation of adolescents or adults.

These results are consistent with Labov's hypothesis that arguments get out-of-hand more frequently in the conversation of children than they do in the conversation of older individuals.

The relationship of the frequency of arguments to the quality of arguments.

Correlations were performed to examine the relationship between the proportion of Disagreements and the following indices of the quality of arguments: proportion of Insults, proportion of Simple Disagreements, proportion of Elaborative and Evaluative Disagreements that were Factually Related and Perspective Related. Total proportion of Disagreements was mildly associated with the proportions of Simple Disagreements ($r=.37, p<.05$, variance accounted for=.16) and moderately negatively associated with the proportion of Factually Elaborated Disagreements ($r=-.54, p<.01$, variance

accounted for=.29) when all Grades were tested together.

Two series of additional correlations were performed to determine whether the results obtained for all Grades combined are equally descriptive of arguments at all of the Grades. Results were recomputed excluding second grade. Then they were recomputed excluding second and fifth grade, and lastly excluding second, fifth and ninth grade. The same procedure was performed eliminating the oldest grades first. These analyses revealed that the association of proportion of Disagreements with proportion of Factually Elaborative Disagreements was a stable finding, but that the association of proportion of Disagreements and proportion of Simple Disagreements was not. This finding applies more to the arguments of adolescents and adults than to those of children.

In summary, conversation in which there is a higher proportion of Disagreements contained a lower proportion of factual reasons among Disagreements and a somewhat higher proportion of unelaborated Disagreements, the latter finding more characteristic of adolescents' and adults' conversation. These findings suggest that higher proportions of Disagreements are not associated with a marked deterioration in the manner in which arguments are conducted but, perhaps, with more stereotyped exchanges.

The correspondence of Categories of Topical Coherence and Kinds of Disagreements.

Several hypotheses have been presented for what the correspondence between the general level of Topical Coherence achieved in conversation and that achieved during episodes of argument and Disagreement within a conversation may be:

1. In his early work, Piaget suggested that argument is more advanced than the general quality of conversation, a possibility consistent with Eisenberg and Garvey's findings pertaining to adversative episodes among preschoolers.

2. The higher proportion of Disagreements in the conversation of children suggests that the quality of argument may lag behind that of the general quality of conversation, a possibility implied by Labov and consistent with the description of arguments in children's conversation (e.g. Brenneis & Lein, 1977).

3. The protracted course of the development of conversational quality as reflected in Topical Coherence and the sharp breaks in the quality of conversation during development suggests that particular norms pertaining to topic are characteristic of each age range. These norms appear to exert a pervasive influence on conversational behavior--even when disagreeing and arguing, which suggests a close relationship between the development of conversation and of argumentation.

A sensitive test of the relative merits of these 3 hypotheses is possible, because the development of Topical Coherence is pronounced within the age range of the present study and it is possible to directly compare relative proportions of the various Categories of Topical Coherence with corresponding Kinds of Disagreement.

Table 2 presents the mean proportions of Categories of Topical Coherence for each grade and the mean relative proportions of corresponding Kinds of Disagreements. Developmental trends in the

relative proportions of different Kinds of Disagreements are marked and parallel developmental trends in the overall quality of Topical Coherence.

Insert Table 2 here.

A repeated measures ANOVA employing Greenhouse-Geisser corrections (McCall & Applebaum, 1973) revealed an interaction between Grade and relative proportions of Kind of Disagreement, $F(4,18)=25.3, p<.01$ (23 groups contained 5 or more Disagreements). Results pertaining to developmental trends in Categories of Topical Coherence are comparable and reported elsewhere. ANOVA was performed on the differences in the proportions of like pairs of Categories of Topic Coherence and Disagreements to determine the relationship between developmental trends for each. Neither a Grade X Differences ANOVA or univariate F tests (including linear trend tests) distinguished the two.

This finding is consistent with the hypothesis that norms pertaining to topic exert a pervasive influence on the accomplishment of disagreeing and arguing. There is no evidence that the quality of argument lags behind the quality of conversation or of a discontinuity in the quality of Disagreements between childhood and adolescence corresponding to changes in the frequency of Disagreements. As well, there is no evidence that Disagreements develop in advance of conversation as a whole.

The relative proportion of Elaborations and Evaluations in conversation as a whole compared with that achieved while disagreeing.

The relative proportion of Elaborations in comparison to Evaluations is a measure of the tendency of speakers to provide reasons in support of positions presented during conversation in comparison to the tendency to provide judgements in support of them. (A judgement including supporting reasons is categorized as offering a reason.) Developmental trends in the relative proportion Elaboration/Evaluation were distinct for Factually Related Talk and Perspective Related Talk, and both trends displayed an Evaluation to Elaboration shift.

Analyses were performed to determine whether similar Elaboration/Evaluation shifts occur for Factually Related Disagreements and Perspective Related Disagreements as for the corresponding kinds of talk generally. ANOVA performed on Differences between corresponding pairs of Factually Related Turns and Factually Related Disagreements revealed a main effect for Differences, $F(1,17)=7.5, p<.05$, as well as a main effect for Grade, $F(3,15)=6.4, p<.05$. The comparable analysis for Perspective Related Turns and Perspective Related Disagreements yielded only a main effect for Grade, $F(1,8)=5.7, p<.05$. (Table 3)

Insert Table 3 here.

These findings reveal that speakers more frequently provide factual reasons in contrast to judgements while disagreeing than they do otherwise. Twelfth graders and adults are much more likely to bolster a Disagreement with a reason than a judgement alone. This finding suggests the existence of a social norm particular to disagreeing that is operative across the age range studied and particularly strong in late adolescence and early adulthood. However, the parallel between developmental trends in Factually Related Turns and Factually Related Disagreements suggests that even this aspect of disagreeing is strongly affected by norms pertaining to topic that are operative in conversation as a whole.

Sequences of Disagreements.

Descriptive studies of argumentation are often illustrated with lengthy, highly structured sequences of disagreements which appear to be distinct dialogic events (e.g. Brenneis & Lein, 1977; Eisenberg & Garvey, 1981). Such examples illustrate not only the orderliness of argument, they also convey the impression that arguments are typically--or often--lengthy and resolved. The impression gained while gathering the present data is that arguments are typically brief and inconclusive. Speakers seem to assume the right to disagree while avoiding prolonged arguments; if a misunderstanding can be resolved quickly, it is. If not, the argument is broken off and discussion of the general topic resumed.

The tendency of Disagreements to form argument sequences. Using Lag Sequential Analyses (Allison & Liker, 1982; Sackett, 1977), Disagreements were found to form sequences (all grade composite estimates and 16/17 within group tests, $p < .01$) where they occurred frequently enough to analyse ($N > 20$). They typically formed brief sequences (2-3 turns) and of the same kind of Disagreement.

Arguments are typically brief. To allow for the possibility that an argument might contain some turns that were not Disagreements, the distribution of argument lengths allowing up to 3 nondisagreements between each pair of Disagreements was calculated. This method resulted in a higher proportion of longer arguments but did not alter the overall distribution of argument lengths, which is presented in table 4.

Insert Table 4 here.

All groups contained many more isolated Disagreements than arguments of two or more turns. Thus, though Disagreements receive a disagreeing reply at more than a chance level and consistently so, Disagreements occurring alone are somewhat more likely not to receive a disagreeing reply than to receive one. Only 6% of arguments--or 21% if isolated Disagreements are discounted--are longer than 8 turns.

Arguments longer than 8 turns were much more likely to occur in the conversation of children than the conversation of adolescents or adults, Fisher exact $p=.021$. Two thirds of the children's conversations contained at least one argument longer than 8 turns while only 13% of the conversations of older individuals did.

Outcomes of arguments. To examine the hypothesis that most arguments are not explicitly resolved, the turns directly following the last Disagreement in each argument were examined. The occurrence of one of the following kinds of focused turn was counted as evidence of an attempt at an explicit resolution: Agreement, Question, Reply, and Directive. The 5 Kinds of Resolution consisted of these 4 kinds of focused turn and a Nonexplicit category. ANOVA revealed an interaction between Grade and Kind of Resolution, $F(7.4, 36.8)=2.7, p<.05$, and a main effect for Kind of Resolution, $F(1.8, 36.8)=38.2, p<.01$, employing Greenhouse-Giesser corrections for departure from compound symmetry. Nonexplicit Resolutions were far more common than Explicit Resolutions; they accounted for 71% of the endings of arguments. The interaction was due to the fact that Directives were more common as argument endings in the conversation of children (8% versus 2% or less) and Agreement, Question, and Answer increasingly frequent as endings to arguments as a function of age (3-12%, 5-12%, and 1-12% respectively).

These findings reveal that arguments tend to be brief and ended inconclusively across the age range examined. In addition, children's conversation was much more likely to contain at least 1 argument longer than 8 turns, a finding consistent with Labov's hypothesis that the arguments of children are less well-controlled than those of older individuals.

Associations between Kinds of Disagreements and dialogue length.

A final set of analyses was performed to determine whether Disagreements tended to impede the development of topics of conversation, resulting in briefer dialogues where disagreeing and arguing are present than elsewhere. A dialogue is defined as a sequence of turns of talk on the same subject; a dialogue may have been interrupted briefly by a consideration of unrelated matters.

A substantially higher proportion of the talk of 2nd graders occurred in Brief Dialogues (discussion on 1 topic) in comparison to older individuals, most of whose talk occurred in Long Dialogues (Table 5). Analyses of differences between proportions of total turns in each Category of Dialogue Length and proportions of each Kind of Disagreement in each (like the above analyses of developmental trends) revealed that only Insults occurred unusually frequently in Brief Dialogues (Table 6). Thus, Insults disrupted topical coherence. Other Kinds of Disagreements did not disrupt topical coherence.

Insert Tables 5 and 6 here.

Discussion

Support for the hypothesis that norms pertaining to topic also govern arguments. Developmental trends in the quality of disagreeing closely parallel trends in the quality of topical coherence. The relative proportions of reasons and judgements in factual talk and personal talk display developmental courses like those for factual disagreements and personal disagreements. As well, disagreements occur singly or in brief sequences that are typically ended by nonargumentative continuation of the topic under discussion.

Support for the hypothesis that arguments are less well-regulated in children's conversation. Disagreements are more frequent in the conversation of children, more variable in frequency of occurrence, and include at least one argument of 8 turns or more. Such evidence suggests that disagreeing is less well-controlled in children's conversation, as Labov hypothesized. However, the effects of higher proportions of disagreements appear to be modest and largely limited to the length of sequences and a lesser tendency to offer factual reasons while disagreeing. The only evidence of effects on the general level of topical coherence is that insults tend to disrupt the development of topics; they are infrequent in second graders' conversation and rare thereafter.

Support for the hypothesis that arguments are a focus for the exchange of information and opinion. Conversationalists offered more factual reasons in comparison to factual judgements across the age range studied. Viewed in the context of total disagreements

this tendency is modest during childhood and early adolescence and somewhat more prominent during late adolescence and adulthood, a time when conversationalists are more likely to supply reasons rather than judgements in a variety of contexts. This result and the association between frequency of disagreements and factual reasons offered while disagreeing suggest norms pertaining to offering reasons that are particular to disagreeing and arguing, a conclusion that is consistent with Piaget's view of arguments as a focus of information exchange. It should be noted that even this aspect of arguments is sensitive to general norms pertaining to topical coherence and that the larger proportions of factual reasons in comparison to judgements occur much later in development than Piaget predicted.

The need for additional research to examine the generalization of the present findings. The present study examined the relationship of topical coherence and arguments in the context of the conversation of small groups of acquainted peers. While the findings are of interest as a description of what occurs in that setting, it would be important to determine whether similar results are obtained in other conversational settings such as dyadic interaction and with other kinds of participants such as friends. Only by doing so can we determine whether the present findings and the view of the regulation of arguments that they suggest are a general phenomenon or one pertaining to small group interaction.

It would also be important to determine whether other kinds of focused interaction are as affected by norms pertaining to topic as arguments appear to be. If so, notions of the relationship of sequencing rules pertaining to focused interactions and those pertaining to more sustained stretches of talk will need considerable revision.

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Table 1

Samples of each category of topical coherence
and corresponding kind of disagreement

Samples of each category of topical coherence	Samples of the corresponding kind of disagreement
<u>Unrelated turns</u>	
1: We--we're havin' sugar cookies!	
2: Yea. At snack time.	
*3: Where's the red truck?	
<u>Tangential turns</u>	
1: I'm goin to have my Thanksgiving at Grandma's	1: You talk too much!
2: My uncle's coming to our house.	*2: Poopy pants!
*3: My uncle is this tall!	*3: Got roddy teeth.
	*4: Ugly butt! Ugly butt.
	*4: So. Jungle breath.
<u>Minimally related turns</u>	
1: Well, when I grow up I'll be a pilot.	1: A whale's as big, as big as a house!
*2: I'm gonna be a a basketball player!	*2: They is not!
*3: I'm gonna be a--ah, a astronaut. That's right.	*3: Is so! Is so.
	*4: Is not.
<u>Factually related turns</u>	
1: How about that fire?	1: But, but we don't have one this week.
*2: Well, they'll be in big trouble for it, too.	*2: Yes we do. Every other Friday's what he said.
*3: There's always something happening on bus 409.	*3: Yea, but not the week before Christmas.
<u>Perspective related turns</u>	
1: Well--um. I got a little problem, get lonely some.	1: She's such a bitch!
*2: You have looked down.	*2: You never let up on her!
*3: Are you missing Ronney?	*3: Well, she makes me so mad, with her ways.
	*4: But you won't talk about it, either.

*Examples of a given kind of turn.

Table 2

mean proportions of each category of topical coherence
and relative proportions of kinds of disagreements
for each grade

Classes of turns	Grade					F tests
	2nd	5th	9th	12th	Adult	
Categories of topical coherence						
Unrelated and Tangential	.37 ¹	.12 ²	.07 ²	.05 ²	.03 ²	14.1**
Minimally related	.49 ²³	.72 ¹	.55 ²	.41 ³	.29 ⁴	49.9**
Factually related	.13 ²	.17 ²	.36 ¹	.42 ¹	.46 ¹	12.8**
Perspective related	.00 ³	.00 ³	.01 ³	.11 ²	.23 ¹	39.3**
Relative proportions of the corresponding kinds of disagreement						
Insult	.47 ¹	.10 ²	.03 ²	.01 ²	.00 ²	19.7**
Simple	.48 ²	.68 ¹	.48 ²	.32 ²³	.17 ³	10.5**
Factually related	.06 ³	.22 ²	.46 ¹	.51 ¹	.60 ¹	13.8**
Perspective related	.00 ³	.00 ³	.03 ³	.16 ²	.23 ¹	6.2**

**p<.01 df=(4,20) for categories of topical coherence
df=(4,18) for relative proportions of disagreements
¹=largest mean according to newman-keuls tests (p<.05)
²=second largest mean, etc.

Table 3

The relative proportion of Elaborations in comparison to Evaluations
and of Elaborative Disagreements
in comparison to Evaluative Disagreements
among Factually Related and Perspective Related Turns
for each Grade

Classes of turns	Grade					<u>F</u> tests
	2nd	5th	9th	12th	Adult	
Factually Related Turns						
Disagreements	.--	.54 ²	.39 ²	.79 ¹	.84 ¹	10.2**
Total turns	.--	.36 ²	.27 ²	.45 ¹²	.65 ¹	8.8**
Perspective Related Turns						
Disagreements	.--	.--	.--	.20 ²	.56 ¹	6.7*
Total turns	.--	.--	.--	.17 ²	.51 ¹	6.1*

**p<.01, df=(3,15)

*p<.05, df=(1,8)

Table 4

The proportions of arguments of various lengths

Categories of argument length*					
1	2-4	5-8	9-13	14-20	21+
.59	.26	.08	.04	.01	.01

*Categories were constructed by finding discontinuities in the overall frequency distribution.

Table 5

The mean proportion of turns
in dialogues of various lengths
for each grade

Categories of dialogue length	Grade					<u>F</u> tests
	2nd	5th	9th	12th	Adult	
Brief (1-10 turns)	.55 ¹	.15 ²	.17 ²	.14 ²	.11 ²	26.8**
Medium (11-30 turns)	.32 ¹	.21 ¹	.31 ¹	.25 ¹	.21 ¹	0.7
Long (31+ turns)	.14 ²	.65 ¹	.51 ¹	.61 ¹	.68 ¹	5.3**

**p<.01 df=(4,20)

Table 6

The mean proportion of each kind of Disagreement
in dialogues of various lengths
for each grade

Categories of dialogue length	Grade					F tests
	2nd	5th	9th	12th	Adult	
<u>Insults</u>						
Brief	.89 ¹	.52 ²	.73 ¹²	.53 ²	---***	2.9*
Medium	.06 ²	.27 ¹	.15 ¹²	.25 ¹	---	3.4**
Long	.06 ²	.20 ¹	.12 ¹²	.22 ¹	---	4.3*
<u>Simple Disagreements</u>						
Brief	.55 ¹	.10 ²	.11 ²	.04 ²	---	20.1**
Medium	.36 ¹	.19 ¹	.32 ¹	.19 ¹	---	1.9
Long	.20 ²	.72 ¹	.57 ¹	.77 ¹	---	18.4**
<u>Factually Related Disagreements</u>						
Brief	---	.09 ¹	.10 ¹	.06 ¹	.14 ¹	1.9
Medium	---	.24 ¹	.24 ¹	.19 ¹	.29 ¹	1.3
Long	---	.67 ¹	.66 ¹	.75 ¹	.57 ¹	1.1
<u>Perspective Related Disagreements</u>						
Brief	---	---	---	.11 ¹	.00 ²	7.6*
Medium	---	---	---	.11 ¹	.25 ¹	2.1
Long	---	---	---	.88 ¹	.75 ¹	1.6

p<.01 *p<.05 *less than 3 groups with 5 or more instances
df=(3,15) for Insults and Simple Disagreements
df=(3,16) for Factually Related Disagreements
df=(1,8) for Perspective Related Disagreements